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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/671,326	09/26/2000	Yaqi Cheng	TI-28221	6078

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TEXAS INSTRUMENTS INCORPORATED
P O BOX 655474, M/S 3999
DALLAS, TX 75265

EXAMINER	
TRAN, KHANH C	

ART UNIT	PAPER NUMBER
2611	

DATE MAILED: 04/11/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/671,326	CHENG ET AL.	
	Examiner	Art Unit	
	Khanh Tran	2611	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *16 January 2006*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-20* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) *19 and 20* is/are allowed.

6)☒ Claim(s) *1-4,6-10,12-14 and 16-18* is/are rejected.

7)☒ Claim(s) *5,11 and 15* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *01/14/2005* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

1. The Amendment filed on 01/16/2006 has been entered. Claims 1-20 are pending in this Office action.

Response to Arguments

2. Applicant's arguments with respect to claims 1-2, 6-10, 12 and 16-18 have been considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. Claims 1-2, 6, 8-10, 12, 14 and 16-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Smith et al. U.S. Patent 5,841,840 in view of Smith et al. U.S. Patent 5,901,205 in view of Kikinis U.S. Patent 6,480,486 B2.

Regarding claim 1, Smith et al. invention is directed to a multiple line modem and a method for enabling a user to usurp two or more telephone lines for data transfer when the telephone is not in use, and the ability to switch from multiple line data operation to one or more line data and one or more line

telephone operation automatically when the telephone handset is lifted or an incoming call is detected signaling a request for voice service.

In column 2, lines 50-65, figure 1 illustrates a schematic view illustrating a multiple line modem and the method as recited above in a typical network connection between a central site and a customer premise (CP). Smith et al. explicitly teaches that first CP modem 31 and second CP modem 32 can be implemented as integrated modems whereby *customer premise modem 30 includes both first CP modem 31 and second CP modem 32.*

Smith teaches in a subsequent invention US Patent 5,901,205, a continuation-in-part of US Patent 5,841,840, the multi-line modem can be implemented as a single DSL modem. Because a single DSL modem is more advantageous than integrated modems in terms of compactness, one of ordinary skill in the art would have been motivated to integrate CP modem 31 and second CP modem 32 into a single modem.

First, CP modem 30 inherently has a transceiver (transmitter and receiver).

CP modem 30 does not explicitly show a first interface as claimed in the application claim. Nevertheless, because CP modem 30 serves computer 33 through lines 37 38, CP modem 30 includes a first interface coupled to the transceiver and configured to serve computer 33 as appreciated by one of ordinary skill in the art.

CP modem 30 does not explicitly show a second interface as claimed in the application claim. However, using analogous argument as for the first interface, ***CP modem 30 includes a second interface coupled to the transceiver and configured to couple the transceiver of CP modem 30 to a network node 20 via line 16***; see figure 1. In light of the foregoing, line 16 corresponds to the claimed first master communication loop. Further shown in figure 1, CP modem 30 is also configured ***to couple to the network node 20 via line 17***, which is also available not only for data mode, but also for voice mode. Line 17 serves phones 36. Because CP modem 30 includes a modem controller 34, which provides adaptive switching capability that enables the modem to switch second line 17 between data transfer mode and voice transfer mode; see column 3, lines 38-46. In view of the aforementioned discussion, line 17 shares between voice mode and data mode, therefore, line 17 corresponds to the claimed shared second communication loop.

Smith et al. does not expressly teach the shared second communication loop configured to serve a second communications terminal. In another US Patent, Kikinis invention is directed to a Service center adapted to a hotel telephone system in which a traveler connects a note-book computer 126 to an existing telephone 122c from a room or a hotel lounge; see column 3, lines 5-15. Phones 122a through 122d represent telephones connected on the hotel's internal telephone system. As known in the art of modem communications, any computer desktop or notebook computer using standard modem for connection

to the Internet can connect to an existing telephone line using the phone jack. Therefore, it would have been obvious for one of ordinary skill in the art at the time of the invention, figure 1 of Smith et al. teachings can be modified so that a computer having a modem can be connected to one of the phones 36 for access to the Internet through existing phone line. In view of that, in column 3 lines 60-68, Smith et al. teaches that the second line 17 is available for voice service, which is used by the modem as taught in Kikinis invention for communicating with the network node. As recited above, the second line 17 corresponds to the claimed shared second communication loop.

Regarding claim 2, referring to figure 3, telephone 12 can be physically remote from the multi-line CP modem 30 as appreciated by one of ordinary skill in the art.

Regarding claim 6, referring to figure 1 of U.S. Patent 5,841,840, multiple-line CP modem 30 is adapted to simultaneously exchange communication information over both first line 16 and second line 13 with central site modem 10 located at a central site.

Regarding claim 8, referring to figure 1 of U.S. Patent 5,841,840, because multiple-line CP modem 30 can be implemented as a multi-line DSL modem operating on multiple DSL lines, therefore, CP modem 30 can be adapted to use second line 17 for receiving downstream communication information.

Regarding claim 9, using analogous argument as for claim 8, CP modem 30 can be adapted to use second line 17 for receiving both upstream and downstream communication information.

Regarding claim 10, Smith et al. teachings use a plurality of telephone lines for voice and data. Telephone line is inherently twisted pair of conductors.

Regarding claim 12, claim 12 is rejected on the same ground as for claim 1 because of similar scope.

Regarding claim 14, referring to figure 1 of US '840', lines 16 and 17 are both operating at speed of twice the speed of each line alone, e.g. 67.2 kbps vs. 33.6 kbps.

Regarding claim 16, claim 16 is rejected on the same ground as for claim 8 because of similar scope.

Regarding claim 17, claim 17 is rejected on the same ground as for claim 9 because of similar scope.

Regarding claim 18, claim 18 is rejected on the same ground as for claim 10 because of similar scope.

4. Claims 3-4, 7 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Smith et al. U.S. Patent 5,841,840, U.S. Patent 5,901,205, Kikinis U.S. Patent 6,480,486 B2 as applied to claim 1 above, and further in view of Kahkoska et al. U.S. Patent 6,002,671.

Regarding claim 3, Smith et al. teaches the transceiver is a multi-line DSL modem, however, does not teach the transceiver exchanges communication information in a format compatible with ADSL standards as claimed in the application claim.

Kahkoska et al. discusses in the background of the invention that ADSL converts existing twisted-pair telephone lines into access lines for high-speed digital communication and multimedia services such as video on demand (VOD). ADSL operates according to a frequency division multiplex (FDM) scheme in which the frequency spectrum is allocated for plain old telephone service (PTOS, 0-4khz) and for data (4khz – 1.1 Mhz). Because Smith et al. teaches in the U.S. Patent '205' that the multi-line modem can be implemented as DSL modem, therefore, it would have been obvious for one of ordinary skill in the art at the time of invention that Smith et al. multi-line DSL modem can be modified to implement as an ADSL multi-line modem because asynchronous transmission is widely used in modem technology due to bandwidth constraint in the upstream and downstream directions as common knowledge of one of ordinary skill in the art.

Regarding claim 4, because Smith et al. DSL modem can be modified to implement as an ADSL multi-line modem, the multi-line modem exchanges

communication information over lines 16 and 17 in a format compatible with ADSL standards.

Regarding claim 7, Smith does not teach multiple-line modem adapted to communicate information over the shared second communication loop using a technique chosen as set forth in the application claim. Kahkoska et al. discusses in the background of the invention that ADSL converts existing twisted-pair telephone lines into access lines for high-speed digital communication and multimedia services such as video on demand (VOD). ADSL operates according to a frequency division multiplex (FDM) scheme in which the frequency spectrum is allocated for plain old telephone service (PTOS, 0-4khz) and for data (4khz – 1.1 Mhz). Because Smith et al. teaches in the U.S. Patent '205' that the multi-line modem can be implemented as DSL modem, therefore, it would have been obvious for one of ordinary skill in the art at the time of invention that Smith et al. multi-line DSL modem can be modified to implement as an ADSL multi-line modem because asynchronous transmission is widely used in modem technology due to bandwidth constraint in the upstream and downstream directions as common knowledge of one of ordinary skill in the art.

Regarding claim 13, claim 13 is rejected on the same ground as for claim 3 because of similar scope.

Allowable Subject Matter

5. Claims 5, 11 and 15 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

6. Claims 19-20 are allowed.

The following is a statement of reasons for the indication of allowable subject matter:

Regarding claim 19, claim 19 is allowed over prior art of record because the cited prior art taken individually or in combination fails to particularly disclose a method of increasing communication bandwidth, the mod comprising the step of "*while the at least one other communication terminal communicates with the network node*".

Conclusion

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Khanh Tran whose telephone number is 571-272-3007. The examiner can normally be reached on Monday - Friday from 08:00 AM - 05:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jay Patel can be reached on 571-272-2988. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

KCT

Khanh Cong Tran 04/06/2006

Primary Examiner KHANH TRAN